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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,548	07/20/2004	Dureseti Chidambarao	FIS920040178US1	4547
32074 7590 06/25/2007 INTERNATIONAL BUSINESS MACHINES CORPORATION DEPT. 18G BLDG. 300-482 2070 ROUTE 52 HOPEWELL JUNCTION, NY 12533			EXAMINER FULK, STEVEN J	
			ART UNIT 2891	PAPER NUMBER
			MAIL DATE 06/25/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Advisory Action Before the Filing of an Appeal Brief</b></p>	<b>Application No.</b> 10/710,548	<b>Applicant(s)</b> CHIDAMBARRAO ET AL.	
	<b>Examiner</b> Steven J. Fulk	<b>Art Unit</b> 2891	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 13 June 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
 b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)); or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
 (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);  
 (b) ☐ They raise the issue of new matter (see NOTE below);  
 (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
 (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
 5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
 6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
 7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
 The status of the claim(s) is (or will be) as follows:  
 Claim(s) allowed: \_\_\_\_\_.  
 Claim(s) objected to: \_\_\_\_\_.  
 Claim(s) rejected: 9, 10, 12, 13 and 15-17.  
 Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
 9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
 10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see continuation sheet.  
 12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
 13. ☒ Other: See attached PTO-892 and NPL Document.

**DETAILED ACTION**

***Response to Amendment***

1. The amendment filed June 13, 2007 will not be entered because it raises new issues that would require further consideration and/or search. Claim 9 has been amended to recite the limitation of the stress film in direct contact with the emitter structure and base film. This raises new issues for consideration because the previous limitations of claim 9 required only that the stress film covers the emitter structure.
2. Applicant's arguments with respect to the rejection of claims 9-10 under 102(e) have been fully considered but they are not persuasive. Applicant argues that Fujimaki does not disclose the nitride layer (fig. 4, 117) to be a stress nitride layer. Contrary to Applicant's statement in the Remarks, the Examiner did not recognize Fujimaki's nitride layer is not a stress layer. It was the Examiner's position, as is well known in the art, that a silicon nitride layer will have inherent stress as deposited and when in direct contact with substrate of a different material, due to the difference in lattice constants. This fact is evidenced by Wolf (NPL Reference "U"). Wolf discloses that thin films inherently have intrinsic stress when deposited (p. 114-117), and that while the stress of silicon nitride can be controlled to be low, it is still present in the film (p. 191). Thus, the limitation in claim 9 of a "stress layer" is written broadly enough to be anticipated by the silicon nitride layer of Fujimaki which is in direct contact with a semiconductor layer (fig. 4, 118a).

The Examiner did recognize the stress nitride layer of Fujimaki was not explicitly disclosed as providing at least 0.5 GPa of intrinsic stress to increase mobility of electrons and holes, and thus the 103(a) rejection in view of Ko et al. was provided. Applicant's arguments with respect to the rejection of claims 12-13 and 15-17 under 103(a) have been fully considered but they are not persuasive. Applicant argues that Fujimaki and Ko are not analogous art because Fujimaki is directed toward a bipolar transistor and Ko is directed toward a field effect transistor, thus Ko is not applicable to bipolar devices. This argument is not persuasive because, as the Applicant points out, both bipolar transistors and field effect transistors involve current flow through semiconductor regions, and thus the mobility of carriers is relevant to the operation of both devices. Ko teaches that strained semiconductor regions are well known to improve the mobility of both holes and electrons (Ko, ¶[0006]). Thus it would be obvious to one of ordinary skill in the art to use the stress nitride layer of Ko to apply at least 0.5 GPa of intrinsic stress to increase mobility of electrons and holes of the device of Fujimaki, thus improving the performance of the device, as described in the 103(a) rejection of the Final Office Action mailed April 13, 2007.

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Fulk whose telephone number is (571) 272-8323. The examiner can normally be reached on Monday through Friday, 9:30am to 6:00pm.

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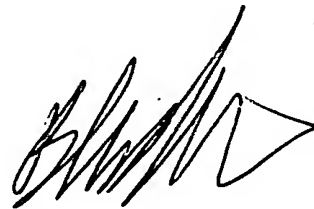
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SJF

Steven J. Fulk  
Patent Examiner  
Art Unit 2891

June 22, 2007



**B. WILLIAM BAUMEISTER**  
**SUPERVISORY PATENT EXAMINER**